Figure 1A

```
   1 agagagcagctcccttcccctcggcgaggaggaaggaagaagaaagccagagagagagag
  61 agagatcatcgcagcttctcctccgaccatttgactgcgactgtgattacaacacaccgt
 121 tgatcctacgaaaaagaggtaatggatactggcggcaattcgctggcgtccggacctgat
                        M  D  T  G  G  N  S  L  A  S  G  P  D    13
 181 ggtgtgaagaggaaagtttgttatttctatgaccctgaggtcggcaattactactatggc
      G  V  K  R  K  V  C  Y  F  Y  D  P  E  V  G  N  Y  Y  Y  G   33
 241 caaggtcatcccatgaagccccatcgcatccgcatgacccatgccctcctcgctcactac
      Q  G  H  P  M  K  P  H  R  I  R  M  T  H  A  L  L  A  H  Y   53
 301 ggtctccttcagcatatgcaggttctcaagcccttccctgcccgcgaacgtgatctctgc
      G  L  L  Q  H  M  Q  V  L  K  P  F  P  A  R  E  R  D  L  C   73
 361 cgcttccacgccgacgactatgtctcttttctccgcagcattacccctgaaacccagcaa
      R  F  H  A  D  D  Y  V  S  F  L  R  S  I  T  P  E  T  Q  Q   93
 421 gatcagattcgccaacttaagcgcttcaatgttggtgaagactgtcccgtctttgacggc
      D  Q  I  R  Q  L  K  R  F  N  V  G  E  D  C  P  V  F  D  G  113
 481 ctttattccttttgccagacctatgctggaggatctgttggtggctctgtcaagcttaac
      L  Y  S  F  C  Q  T  Y  A  G  G  S  V  G  G  S  V  K  L  N  133
 541 cacggcctctgcgatattgccatcaactgggctggtggtctccatcacgctaagaagtgc
      H  G  L  C  D  I  A  I  N  W  A  G  G  L  H  H  A  K  K  C  153
 601 gaggcctctggcttctgttacgtcaatgatatcgtcttagctatcctagagctccttaag
      E  A  S  G  F  C  Y  V  N  D  I  V  L  A  I  L  E  L  L  K  173
 661 cagcatgagcgtgttctttatgtcgatattgatatccaccacggggatggagtggaggag
      Q  H  E  R  V  L  Y  V  D  I  D  I  H  H  G  D  G  V  E  E  193
 721 gcattttatgctactgacagggttatgactgtctcgtttcataaatttggtgattacttt
      A  F  Y  A  T  D  R  V  M  T  V  S  F  H  K  F  G  D  Y  F  213
 781 cccggtacaggtcacattcaggatataggttatggtagcggaaagtactattctctcaat
      P  G  T  G  H  I  Q  D  I  G  Y  G  S  G  K  Y  Y  S  L  N  233
 841 gtaccactggatgatggaatcgatgatgagagctatcatctgttattcaagcccatcatg
      V  P  L  D  D  G  I  D  D  E  S  Y  H  L  L  F  K  P  I  M  253
 901 gggaaagttatggaaatttttccgaccagggggctgtggtattgcaatgtggtgctgactcc
      G  K  V  M  E  I  F  R  P  G  A  V  V  L  Q  C  G  A  D  S  273
 961 ctatctggggatcggttaggttgcttcaatctttcaatcaaaggtcatgctgagtgcgtc
      L  S  G  D  R  L  G  C  F  N  L  S  I  K  G  H  A  E  C  V  293
1021 aaatttatgagatcgttcaatgttcccctactgctcttgggtggtggtggttacactatc
      K  F  M  R  S  F  N  V  P  L  L  L  L  G  G  G  G  Y  T  I  313
1081 cgcaatgttgcccgttgctggtgctacgagactggagttgcacttggagttgaagttgaa
      R  N  V  A  R  C  W  C  Y  E  T  G  V  A  L  G  V  E  V  E  333
1141 gacaagatgccggagcatgaatattatgaatactttggtccagactatacacttcacgtt
      D  K  M  P  E  H  E  Y  Y  E  Y  F  G  P  D  Y  T  L  H  V  353
1201 gctccaagtaacatggaaaataagaattctcgtcagatgcttgaagagattcgcaatgac
      A  P  S  N  M  E  N  K  N  S  R  Q  M  L  E  E  I  R  N  D  373
1261 cttctccacaatctctctaagcttcagcatgctccaagtgtaccatttcaggaaagacca
      L  L  H  N  L  S  K  L  Q  H  A  P  S  V  P  F  Q  E  R  P  393
1321 cctgatacagagactcccgaggttgatgaagaccaagaagatggggataaaagatgggat
      P  D  T  E  T  P  E  V  D  E  D  Q  E  D  G  D  K  R  W  D  413
1381 ccggattcagacatggatgttgatgatgaccgtaaacctataccaagcagagtaaaaaga
      P  D  S  D  M  D  V  D  D  D  R  K  P  I  P  S  R  V  K  R  433
1441 gaagctgttgaaccagatacaaaggacaaggatggactgaaaggaattatggagcgtgga
      E  A  V  E  P  D  T  K  D  K  D  G  L  K  G  I  M  E  R  G  453
1501 aaaggttgtgaggtggaggtggatgagagtggaagcactaaggttacaggagtaaaccca
      K  G  C  E  V  E  V  D  E  S  G  S  T  K  V  T  G  V  N  P  473
1561 gtggggagtggaggaagcaagtgtgaaaatggaagaggaaggaacaaacaagggtggggcg
      V  G  V  E  E  A  S  V  K  M  E  E  E  G  T  N  K  G  G  A  493
1621 gagcaggcgtttcctcctaaaacataagactcggagcttctaatttcttgctactttttc
      E  Q  A  F  P  P  K  T  *                                   502
1681 tgtctatcaaatgttgctagttaagtttctggagttgttgttgttgtaagcactcctctg
1741 ttttagaggattgagcacggatatgtatttattcgttgcatgtctgaatgatgatatgat
1801 atgacaa
```

Figure 1B

```
   1 gtgcccacaactcctagtaatgactttctcaggcattgttgacacaaattttgctctgag
  61 taaaacttggggaatagagagagactctgagtgagagagagattctgagtgagagacggag
 121 atggaggcagacgaaagcggcatctctctgccgtcgggacccgacggacgtaagcggcga
     M  E  A  D  E  S  G  I  S  L  P  S  G  P  D  G  R  K  R  R    20
 181 gtcagttacttctacgagccgacgatcggagactactactacggtcaaggccacccgatg
     V  S  Y  F  Y  E  P  T  I  G  D  Y  Y  Y  G  Q  G  H  P  M    40
 241 aagcctcaccggatccgtatggctcatagcctaatcattcactatcacctccaccgtcgc
     K  P  H  R  I  R  M  A  H  S  L  I  I  H  Y  H  L  H  R  R    60
 301 ttagaaatcagtcgccctagcctcgctgacgcctccgatatcggccgattccattcgccg
     L  E  I  S  R  P  S  L  A  D  A  S  D  I  G  R  F  H  S  P    80
 361 gagtatgttgacttcctcgcttccgtttcgccggaatctatgggcgatccttccgctgca
     E  Y  V  D  F  L  A  S  V  S  P  E  S  M  G  D  P  S  A  A   100
 421 cgaaacctaaggcgattcaatgtcggtgaggattgtcctgtcttcgacggactttttgat
     R  N  L  R  R  F  N  V  G  E  D  C  P  V  F  D  G  L  F  D   120
 481 ttttgccgtgcttccgccggaggttctattggtgctgccgtcaaattaaacagacaggac
     F  C  R  A  S  A  G  G  S  I  G  A  A  V  K  L  N  R  Q  D   140
 541 gctgatatcgctatcaattgggggcggtgggcttcaccatgctaagaaaagcgaggcttct
     A  D  I  A  I  N  W  G  G  G  L  H  H  A  K  K  S  E  A  S   160
 601 gggttttgctatgtaaacgacatcgtgctagggattctggagttgctcaagatgtttaag
     G  F  C  Y  V  N  D  I  V  L  G  I  L  E  L  L  K  M  F  K   180
 661 cgggttctctacatagatattgatgtccaccatggagatggagtggaagaagcgttttac
     R  V  L  Y  I  D  I  D  V  H  H  G  D  G  V  E  E  A  F  Y   200
 721 accactgatagagttatgactgtttctttccacaaatttggggactttttcccaggaact
     T  T  D  R  V  M  T  V  S  F  H  K  F  G  D  F  F  P  G  T   220
 781 ggtcacataagagatgttggcgctgaaaaagggaaatactatgctctaaatgttccacta
     G  H  I  R  D  V  G  A  E  K  G  K  Y  Y  A  L  N  V  P  L   240
 841 aacgatggtatggacgatgaaagtttccgcagcttgtttagacctcttatccagaaggtt
     N  D  G  M  D  D  E  S  F  R  S  L  F  R  P  L  I  Q  K  V   260
 901 atggaagtgtatcagccagaggcagttgttcttcagtgtggtgctgactccttaagtggt
     M  E  V  Y  Q  P  E  A  V  V  L  Q  C  G  A  D  S  L  S  G   280
 961 gatcggttgggttgcttcaacttatcagtcaagggtcacgctgattgccttcggttctta
     D  R  L  G  C  F  N  L  S  V  K  G  H  A  D  C  L  R  F  L   300
1021 agatcttacaacgttcctctcatggtgttgggtggtgaagggtatactattcgaaatgtt
     R  S  Y  N  V  P  L  M  V  L  G  G  E  G  Y  T  I  R  N  V   320
1081 gcccgttgctggtgttatgagactgcagttgctgttggagtagagccggacaacaaactc
     A  R  C  W  C  Y  E  T  A  V  A  V  G  V  E  P  D  N  K  L   340
1021 ccttacaatgagtattttgagtatttcggcccagattatacgcttcatgtcgacccaagt
     P  Y  N  E  Y  F  E  Y  F  G  P  D  Y  T  L  H  V  D  P  S   360
1201 cctatggagaatttaaacacgcccaaagatatggagaggataaggaacacgttgctggaa
     P  M  E  N  L  N  T  P  K  D  M  E  R  I  R  N  T  L  L  E   380
1261 caactttcgggactaatacacgcacctagcgtccagtttcagcacacaccaccagtcaat
     Q  L  S  G  L  I  H  A  P  S  V  Q  F  Q  H  T  P  P  V  N   400
1321 cgagttttggacgagccggaagatgacatggagacaagaccaaaacctcgcatctggagt
     R  V  L  D  E  P  E  D  D  M  E  T  R  P  K  P  R  I  W  S   420
1381 ggaactgcgacttatgaatcagacagtgacgatgatgataaacctcttcatggttactca
     G  T  A  T  Y  E  S  D  S  D  D  D  D  K  P  L  H  G  Y  S   440
1441 tgtcgtggtggcgcaactacggacagggactctaccggtgaagatgaaatggatgacgat
     C  R  G  G  A  T  T  D  R  D  S  T  G  E  D  E  M  D  D  D   460
1501 aacccagagccagacgtgaatcctccatcgtcttaaaccagcttgatggtttggtgtctc
     N  P  E  P  D  V  N  P  P  S  S  *                          471
1561 ttttgccatatgataatgtcggcagatttaagaaacaagttaggggaatgaatgattctt
1621 tgatgtttttttcagcaaccttttgagttctgtgaaaacgctgcattgattagaacagtga
1681 caactgactagtattttggcccaagttagaaaatcagaatatgtgaaaaaaaaaaaaaaa
1741 aaaaaaaagggcggccgctctagaggatccaagcttacgtacgcgtgcatgcgacgtcat
```

FIGURE 2

A

```
   1   cacgcgtccgtaaaaatcctctcttttctcaaccttgattcttagccatggagttctgg
                                                            M   E   F   W      4
  61   ggaattgaagttaaatcaggaaagccagttacagtgactcctgaagaaggcattcttatc
         G   I   E   V   K   S   G   K   P   V   T   V   T   P   E   E   G   I   L   I   24
 121   cacgtttctcaggcatcgcttggagaatgtaaaaacaagaagggagagtttgtgccttta
         H   V   S   Q   A   S   L   G   E   C   K   N   K   K   G   E   F   V   P   L   44
 181   catgtaaaggttgggaaccagaacttggttctgggaactctatcgactgagaacatccct
         H   V   K   V   G   N   Q   N   L   V   L   G   T   L   S   T   E   N   I   P   64
 241   cagcttttctgtgatttggtattcgacaaggagtttgagcttctcacacttggggaaaa
         Q   L   F   C   D   L   V   F   D   K   E   F   E   L   S   H   T   W   G   K   84
 301   ggaagtgtttactttgttggatacaaaactcccaacattgagccacaaggctattctgag
         G   S   V   Y   F   V   G   Y   K   T   P   N   I   E   P   Q   G   Y   S   E   104
 361   gaagaagaggaagaagaggaagaagttcctgctgggaatgctgccaaggctgtagctaaa
         E   E   E   E   E   E   E   V   P   A   G   N   A   A   K   A   V   A   K   124
 421   ccaaaggctaagcctgcagaagtgaagccagctgttgatgatgaagaggatgagtctgat
         P   K   A   K   P   A   E   V   K   P   A   V   D   D   E   E   D   E   S   D   144
 481   tctgacggaatggatgaagatgattctgatggtgaggattctgaggaagaagagcctaca
         S   D   G   M   D   E   D   D   S   D   G   E   D   S   E   E   E   P   T   164
 541   cctaagaagcctgcatcaagcaagaagagagctaatgaaactacccctaaagcacctgtg
         P   K   K   P   A   S   S   K   K   R   A   N   E   T   T   P   K   A   P   V   184
 601   tcagcaaagaaggcgaaagtagcagttactcctcagaaaacagatgagaagaagaaaggg
         S   A   K   K   A   K   V   A   V   T   P   Q   K   T   D   E   K   K   K   G   204
 661   ggaaaggctgcaaaccagagcccaaagtcggccagtcaagtctcatgtggttcatgcaag
         G   K   A   A   N   Q   S   P   K   S   A   S   Q   V   S   C   G   S   C   K   224
 721   aagactttcaactcagggaatgcacttgagtctcacaacaaggccaagcacgctgctgcc
         K   T   F   N   S   G   N   A   L   E   S   H   N   K   A   K   H   A   A   A   244
 781   aagtgaagtggtttcttattagagcttgtgatttctatggaattttgcctgtagtcttta
         K   *                                                               245
 841   tgaaaccttcggatttcttatattttctttgataacaagagtcttaatgaaagagagc
       cagttggagtcttaaaaaaaaaaaaaaaaaagggcggccgc
```

FIGURE 2

B

```
   1 gtctttcgcttctaaaaaaaaaacctaacaacctctcttctctcttcctcgttcaacaaca
  61 atggagttctggggagttgcggtgacaccaaaaaacgctactaaggtgactcctgaagaa   20
     M  E  F  W  G  V  A  V  T  P  K  N  A  T  K  V  T  P  E  E
 121 gacagccttgtccacatttctcaggcttcacttgactgcacagtgaaatctggagaatct   40
     D  S  L  V  I  I  S  Q  A  S  L  D  C  T  V  K  S  G  E  S
 181 gtggttttgagtgtgactgttggtggggctaaacttgttattggaacactttcacaagac   60
     V  V  L  S  V  T  V  G  G  A  K  L  V  I  G  T  L  S  Q  D
 241 aagttccctcagattagctttgctagttttgataaagagtttgagctttcacacagc     80
     K  F  P  Q  I  S  F  E  L  V  F  D  K  E  F  E  L  S  H  S
 301 ggtaccaaagcaaatgttcattccattggctacaaatcccccaacatcgagcaggatgac  100
     G  T  K  A  N  V  H  F  I  G  Y  K  S  P  N  I  E  Q  D  D
 361 ttcactagttcggatgatgaggatgttcctgaagctgttcctgctcctgcccctactgct  120
     F  T  S  S  D  D  E  D  V  P  E  A  V  P  A  P  A  P  T  A
 421 gttactgccaacggaaatgctggagcagctgttgtcaaggctgacacaaagccaaaggcc  140
     V  T  A  N  G  N  A  G  A  A  V  V  K  A  D  T  K  P  K  A
 481 aaacctgccgaagtgaagcctgcagaagagaagcctgaatcagacgaggaagatgagtct  160
     K  P  A  E  V  K  P  A  E  E  K  P  E  S  D  E  E  D  E  S
 541 gatgatgaagatgagtctgaagaggatgatgactctgagaaaggaatggatgttgatgaa  180
     D  D  E  D  E  S  E  E  D  D  D  S  E  K  G  M  D  V  D  E
 601 gatgactcagatgatgacgaggaggaggaggattctgaggatgaagaagaggaggagactcct  200
     D  D  S  D  D  D  E  E  E  D  S  E  D  E  E  E  E  T  P
 661 aagaagcctgagccaatcaacaagaagaggcccaaatgaatcctgtatccaaaacacccgtc  220
     K  K  P  E  P  I  N  K  K  R  P  N  E  S  V  S  K  T  P  V
 721 tctggaaagaaggcaaaaccagcagcagcaccagcttctactcctcagaagacagagaag  240
     S  G  K  K  A  K  P  A  A  P  A  S  T  P  Q  K  T  E  K
 781 aagaaaggaggacacaccgccacaccacacccagctaagaagggtggaaagtctcctgtg  260
     K  K  G  G  H  T  A  T  P  H  P  A  K  K  G  G  K  S  P  V
 841 aatgctaaccagagccccaagtctggaggtcaatcatccggtggtaacaacaacaagaag  280
     N  A  N  Q  S  P  K  S  G  G  Q  S  S  G  G  N  N  N  K  K
 901 ccattcaactcaggcaaacaatttggtggttccaacaacaagggttctaacaagggcaag  300
     P  F  N  S  G  K  Q  F  G  G  S  N  N  K  G  S  N  K  G  K
 961 ggaaagggtagagcttaaggacgtggatcaaggagaggtttttgggcttttcgagtagatga
     G  K  G  R  A  -                                          305
1021 tgaaaacacttggaagtgtggtttttggatttttatcttatttttattagtataacttgtta
1081 tcggatgagctattttgagtatttgcaattctctactttcctatgtaattcagtatatgaa
1141 tattttgctgaaatgagaaagaagactcgaattgcaaacaaaaaaaaaaaaaaaaaaaaa
1201 aagggcggccgc
```

FIGURE 3

```
AtRPD3A  MI-----TGG NSLASVGPDG VKRKVCYFYL EEVGNYYYGC GHPMKPHRIF   45
AtRPD3B  MEADESGI-- -SLPS-GPDG PKERVSYFYE ETIGDYYYGC GHPMKPHRIF   47
ZmRPD3   MEPSSAGSGG NSLPSVGPDG CKRRVCYFYL PDVGNYYYGC GHPMKPHRIF   50
RPD3     MVYEATPFD- ---EITVKPS CKERVAYFYI ADVGNYAYGA GHPMKPHRIF   46

AtRPD3A  MTHALLAHYG LIQHMOVLKE FFARERDLCR FHALDYVSFL RSITPETOOL   95
AtRPD3B  MAHSLIIHYH LHRRLEISRE SLATASLIGE FHSPEYVDFL ASVSPESMGL   97
ZmRPD3   MTHSLLERYG LINCMOVYRE NPARERELCF FHAEEYINFL RSVTPETOOL  100
RPD3     MAHSLIMNYG LYKKMEIYRA KPPTKQEMCQ FHTDEYIDFL SRVTPDNLEM   96

AtRPD3A  QI--RCLKRE NVGEDCPVFL GLYSFCOTYA GGSVGCSVKL NHGLCDIAIN  143
AtRPD3B  PSAAFNLRRE NVGEDCPVEE GIFDECRASA GGSIGAAVKL NRQDADIAIN  147
ZmRPD3   QI--RLLKRE NVGEECPVLL GLYSFCOTYA GASVGGAVRF NHGH-DIAIN  148
RPD3     --FKCESVKS NVGDDCPVFL GLYEYCSISG GGSMEGEARL NRGKCIVAVN  144

AtRPD3A  WAGGLHHAKK CEASGFCYVN DIVLAILELI KCHERVLYVL IDIHHGDGVE  193
AtRPD3B  WGGGLHHAKK SEASGFCYVN DIVLGILELI KMFKRVLYIL IDVHHGDGVE  197
ZmRPD3   WSGGLHHAKK CEASGFCYVN DIVLAILELI KHGCRVLYVL IDIHHGDGVE  198
RPD3     YAGGLHHAKK SEASGFCYLN DIVLGIIELI RYHPRVLYIL IDVHHGDGVE  194

AtRPD3A  EAFYATDRVM TVSFHKFGDY FFGTGHICDI GYESGKYYSI NVPLDDGIDL  243
AtRPD3B  EAFYTTDRVM TVSFHKFGDE FPGTGHIRLV GAEKGKYYAL NVPLNDGMDL  247
ZmRPD3   EAFYTTDRVM TVSFHKFGDY FPGTGDIRDI CHSKGKYYSI NVPLDDGIDL  248
RPD3     EAFYTTDRVM TCSFHKYGEF FPGTGELRDI GVEAGKNYAV NVPIRDGIDL  244

AtRPD3A  ESYHLLFKPI MGKVMEIFRE GAVVLQCGAL SLSGDRLGCF NLSIKGHAEC  293
AtRPD3B  SSFRSLFREL ICKVMEVYQE EAVVLQCGAL SLSGDRLGCF NLSVKGHADC  297
ZmRPD3   ESYCSLFKPI MGKVMEVFRE GAVVLQCGAL SLSGDRLGCF NLSIKGHAEC  298
RPD3     ATYRSVEEV IKKIMEWYQE SAVVLQCGGL SLSGDRLGCF NLSMEGHANC  294

AtRPD3A  VKEMRSFNVE LLLLGGGGYT IRNVARCWCY ETGVALGVEV EDKMEHEYY  343
AtRPD3B  LRELRSYNVE LMVLGCEGYT IRNVARCWCY ETAVAVGVEF ENKLPYNEYF  347
ZmRPD3   VRYMRSFNVE LLLLGGGGYT IRNVARCWCY ETGVALGCEF EDKMEVNEYY  348
RPD3     VNYVKSFGIE MMVVGGGGYT MRMVARTWCF ETGLLNNEVL EKDLPYNEYY  344

AtRPD3A  EYFGPDYTLH VAPSNMENKN SRCMLEEIRN CLIHNLSKLQ HAPSVPFQER  393
AtRPD3B  EYFGPDYTLH VDPSNMENKN TPKDVERIRN TLIHNLSGLI HAPSVQFQHT  397
ZmRPD3   EYFGPDYTLH VAPSNMENKT TRCQLDDIRS ----KLSKLR HAPSVHFQEF  394
RPD3     EYYSPDYKLS VRPSNFFNVM TPEYLDKVMT NIFAMLENTK YAPSVGLNHT  394

AtRPD3A  PPDTETPEVL EDCELGLKRW DPDSDMDVDI E--------E KEIPSEVKRE  435
AtRPD3B  PFVNRVLD-- ---------- EPEDDME--- --------TE KF---RIWSG  421
ZmRPD3   VPDTEIPECL EDCDLPLEGH DPDSDMEVDI HKAVEESSRE SILGIKIKRE  444
RPD3     E--------- --------R- EAELGDVEE ESA------- ----------  408

AtRPD3A  AVEPDIKDKL GLRGIMERGK GCEVEVDESC STRVT---GV NPVGVEEAS  481
AtRPD3B  TATYESDSDL DDRPL--HGY SE-------- --RGGATTER DSTGEDEMDL  459
ZmRPD3   FGENAIRVQL GGRVASEH-R GLEPMAEDIG SSRQAPQAEA SAMAIDEPSN  493
RPD3     ---------- ---------- ---------- ---------- ------EAKL  412

AtRPD3A  VKMEEEGTNR GGAECEFEPR T                                 502
AtRPD3B  DNPEEDVNP- -------ESS                                   471
ZmRPD3   VKNEPESSTE LQGQABAYHR P                                 514
RPD3     TRGGSQYARD LHVEHDNEFY                                   422
```

FIGURE 4

```
AtHD2A   MEFWGIEVKS  CKPVTVTPEE  GILIHVSQAS  LGECKNKKGE  FVPLHVKVGN   50
AtHD2B   MEFWGVAVTE  KNATKVTPEE  DSLVHISQAS  L-DCTVKSGE  SVVLSVTVGG   49
ZmHD2    MEFWGLEVKE  GSTVKCEEGY  GFVLHLSQAA  LGE    KKSD  NALMYVKIDD   48
                                         *

AtHD2A   QNLVLGTLST  ENIPCLFCDL  VFDKEFELSH  TWGKGSVYFV  GYKTPNIEPQ  100
AtHD2B   AKLVIGTLSQ  DKFPQISFDL  VFDKEFELSH  SGTKANVHFI  GYKSPNIEQD   99
ZmHD2    QKLAIGTLSV  DKNEHIQFDL  IFDKEFELSH  TSKTTSVFFT  GYKVEQPFEE   98
                           *

AtHD2A   GYSEEEEEE-  EEEVPAGNAA  ----------  ---KAVAKPK  AKPAEVKPAV  136
AtHD2B   DFTSSCDEDV  PEAVPAPAPT  AVTANGNAGA  AVVKADTKPK  AKPAEVKPAE  149
ZmHD2    DEMDLDSEDE  DEELNVP---  VVKENGKADE  KKQKSQEKAV  AAPSKSSPDS  145

AtHD2A   ----DDEEDE  SDS-C-----  -------GMD  EDDSDGEDSE  EEE-------  162
AtHD2B   EKPESDEEDE  SDDECESEED  --DDSEKGMD  VDEDCSDDDE  EEDSEDEEEE  197
ZmHD2    KKSKDDDDSD  EDETDDSDED  ETDDSDEGLS  SEEGDDDSSD  EDDTSDDEEE  195

AtHD2A   PTP--KKPAS  -SKKRANETT  PKAPVSAKKA  KVAV----TP  QKTDEKK---  202
AtHD2B   ETP--KKPEP  INKKRPNESV  SKTPVSGKKA  KPAAAPASTP  QK-----TEK  240
ZmHD2    DTETPKKPEV  GKKRPAESSV  LKTFLSDKKA  KVATPSS---  QKTGGK----  238

AtHD2A   -KGGKA----  ----------  --------AN  QSPKSASQVS  CGSC-KKTFN  229
AtHD2B   KKGG--HTAT  PHPAK-----  KGGKSPVNAN  QSPKSGGCSS  GCNNNKKPFN  283
ZmHD2    -KGAAVHVAT  PHPAKGKTIV  NNDKSVKSPK  SAPKSGGSVP  CKPCSK-SFI  287

AtHD2A   SGNALE-SHN  KAKHAAAK                                       245
AtHD2B   SGKQFGGSNN  KGSNKGKGKG  RA                                 305
ZmHD2    SETALQA-HS  RAKMGASESQ  VQ                                 308
```

FIGURE 5

A   B

EcoRI HindIII PstI XhoI   EcoRI HindIII PstI XhoI

-23kb-

-9.4kb-

-6.6kb-

-2.3kb-

-2.0kb-
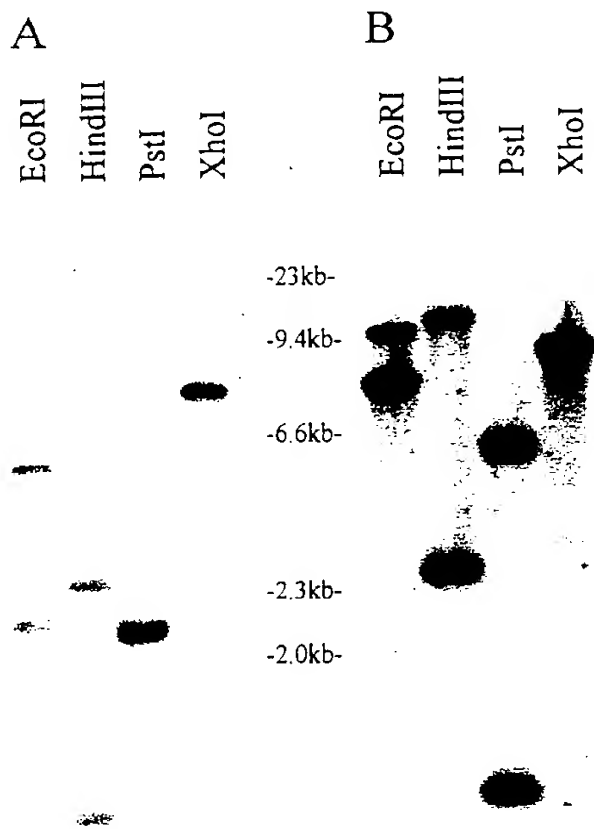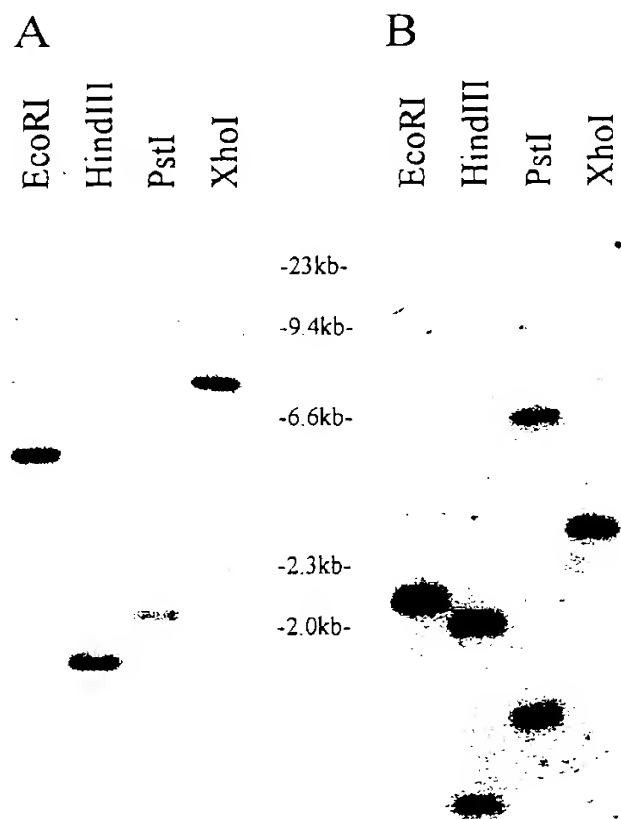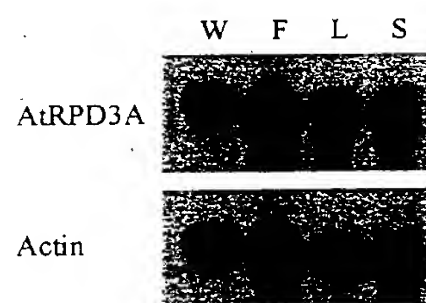
FIGURE 6

FIGURE 7

FIGURE 8
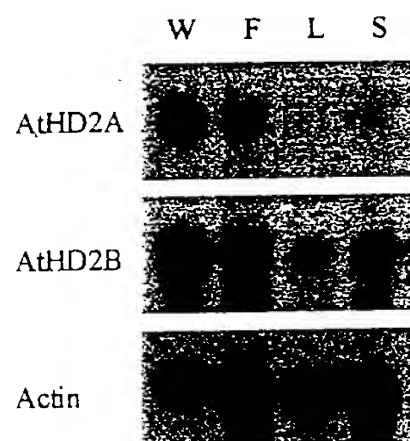
FIGURE 9

A

Effector Plasmids

GAL4-AtRPD3A —[tCUP]—[GAL4BD | AtRPD3A]—[Nos-T]—

GAL4 —[tCUP]—[GAL4BD]—[Nos-T]—

Reporter Plasmid

UAS_{GAL4}

UAS_{GAL4}-BtCUP-GUS —■■—[BstYI-tCUP]—[GUS]—[Nos-T]—

B
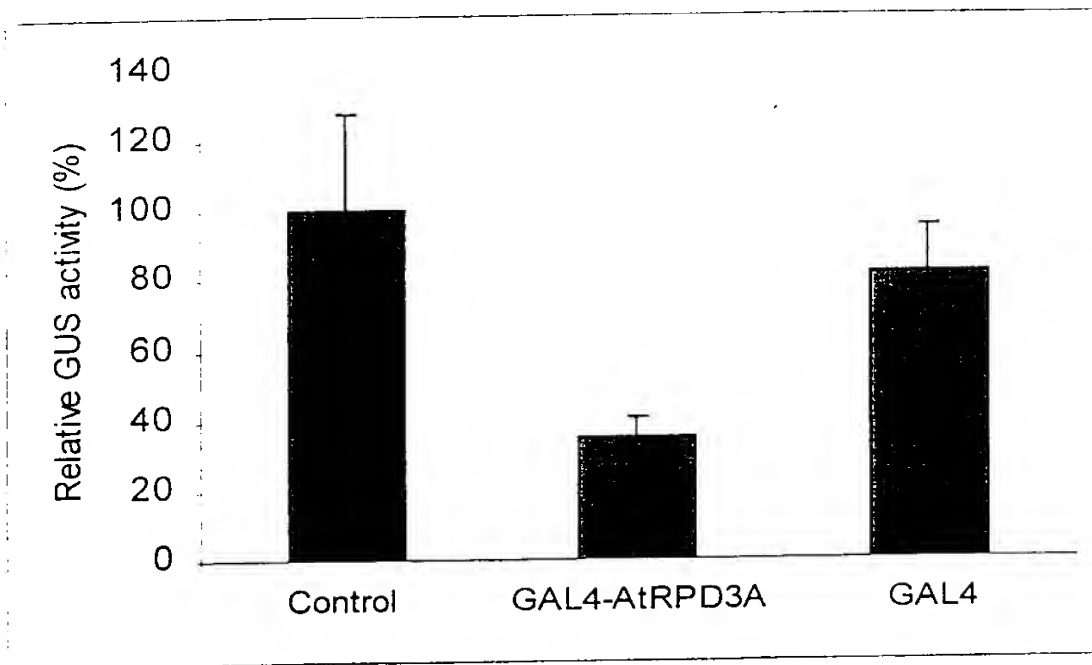
Figure 10

A

Reporter Plasmid

UAS$_{GAL4}$-tCUP-GUS

Effector Plasmids

GAL4-AtHD2A (1-245)

GAL4-AtHD2A (1-211)

GAL4-AtHD2A (1-162)

GAL4-AtHD2A (1-100)

GAL4-AtHD2A (73-245)

GAL4

B

FIGURE 11

A

AtRPD3A cDNA

B

BstYI-tCUP   Antisense   Nos-T
promoter   AtRPD3A

FIGURE 12

WT B2 B5 A1

Endogenous
AtRPD3A   ← 1.6kb

Antisense
AtRPD3A   ← 0.6kb

Actin   ← 1.5kb

FIGURE 13

WT   1   2   3   4   5

Endogenous
AtHD2A

Antisense
AtHD2A
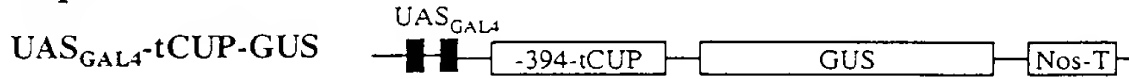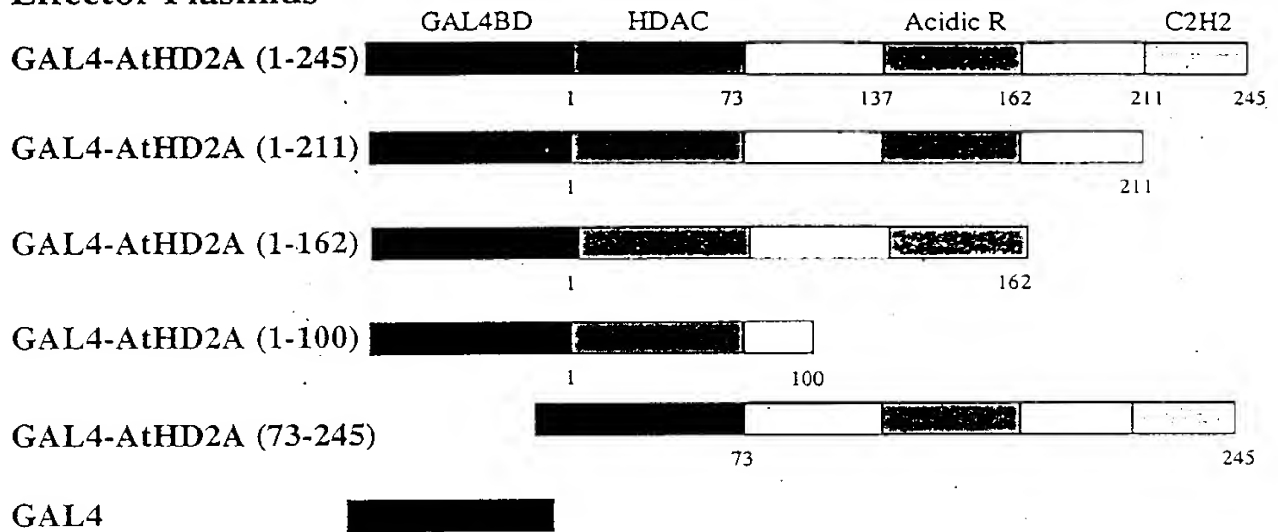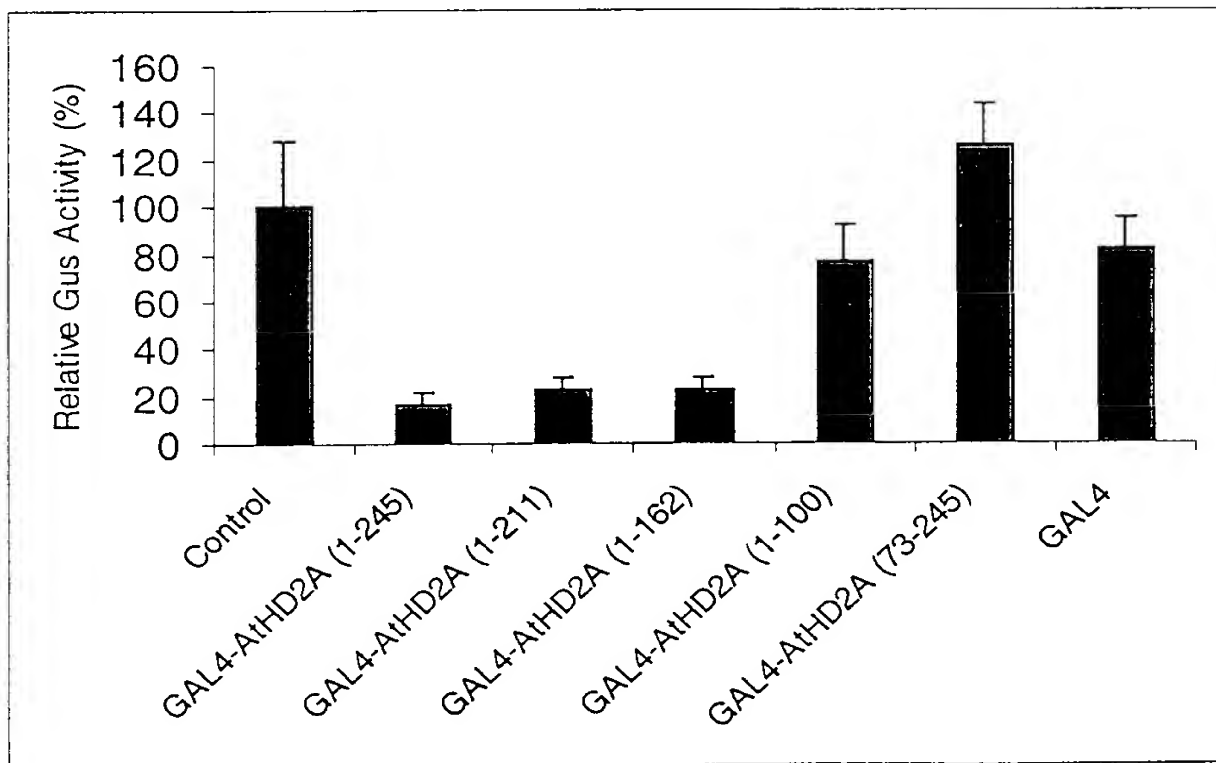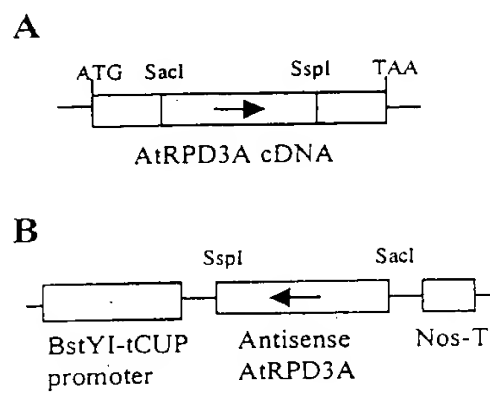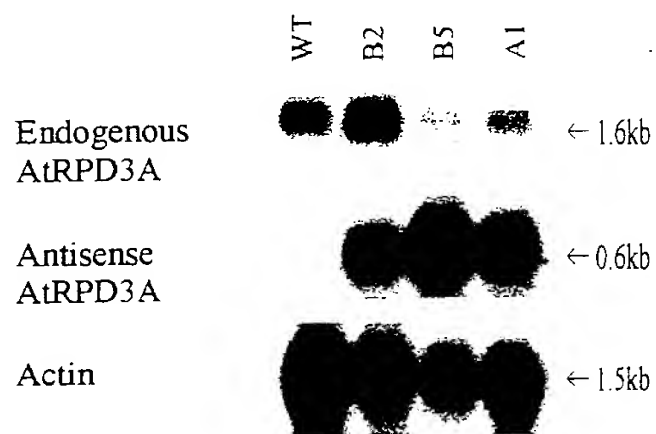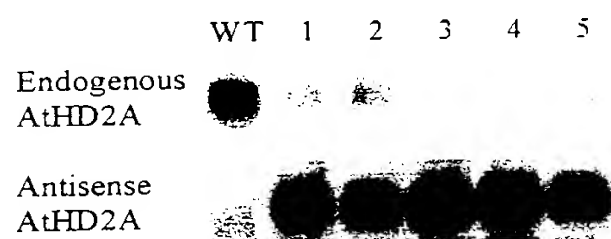
FIGURE 14

FIGURE 15

FIGURE 16

A

B

200 µm

A

Reporter

Effector 1   X   X   Effector 2

Progeny 1   Progeny 2

● Reporter expression
○ Repressor expression
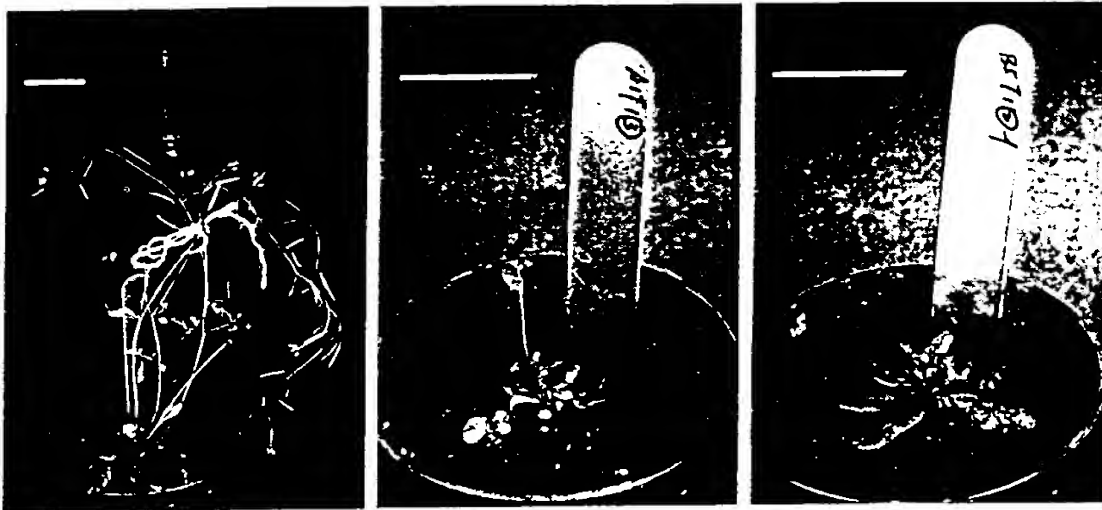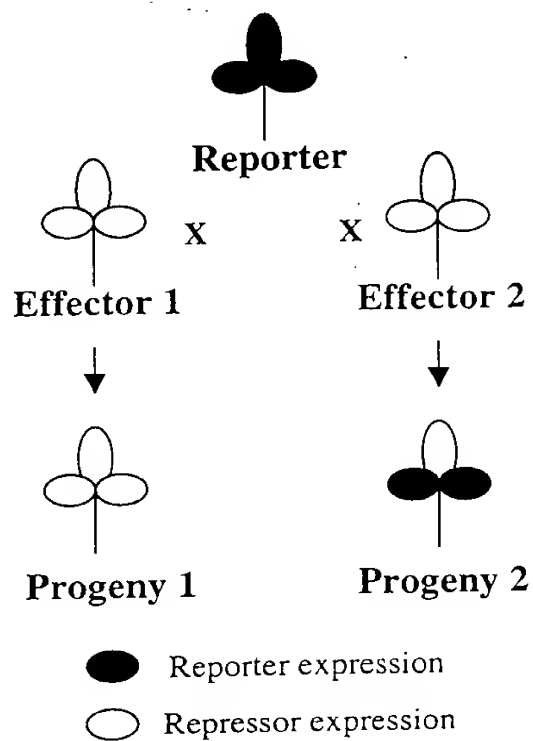
B

Effector Plasmids

tCUP-GAL4/AtHD2A (Effector 1)

| tCUP | GAL4BD | AtHD2A | Nos-T |
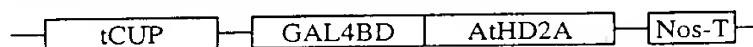
NAP1-GAL4/AtHD2A (Effector 2)

| NAP1 | GAL4BD | AtHD2A | Nos-T |
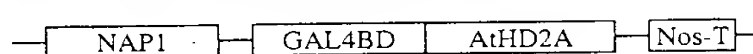
Reporter Plasmid

UAS_{GAL4}-tCUP-GUS (or UAS_{GAL4}-35S-GUS)

UAS_{GAL4}

| -394tCUP | GUS | Nos-T |
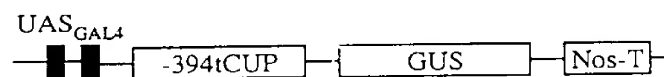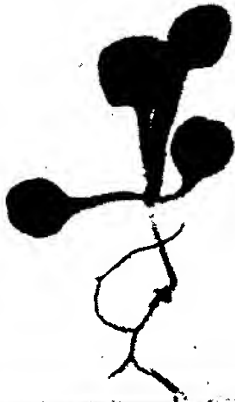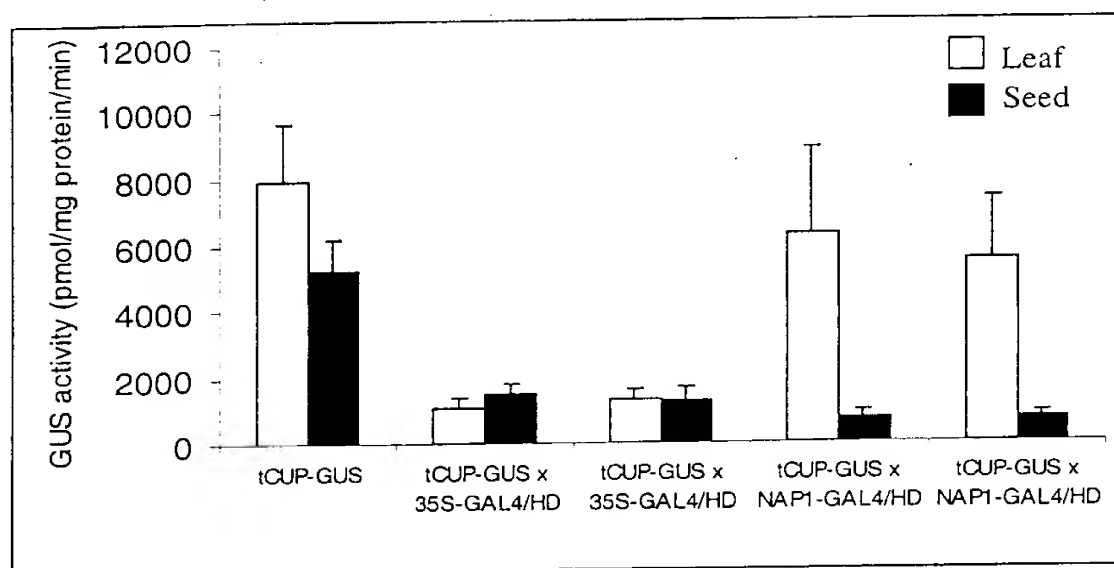
Figure 17

Figure 18

Figure 19(a)

Tissue Florogenic Transient Expression Assay of Leaves
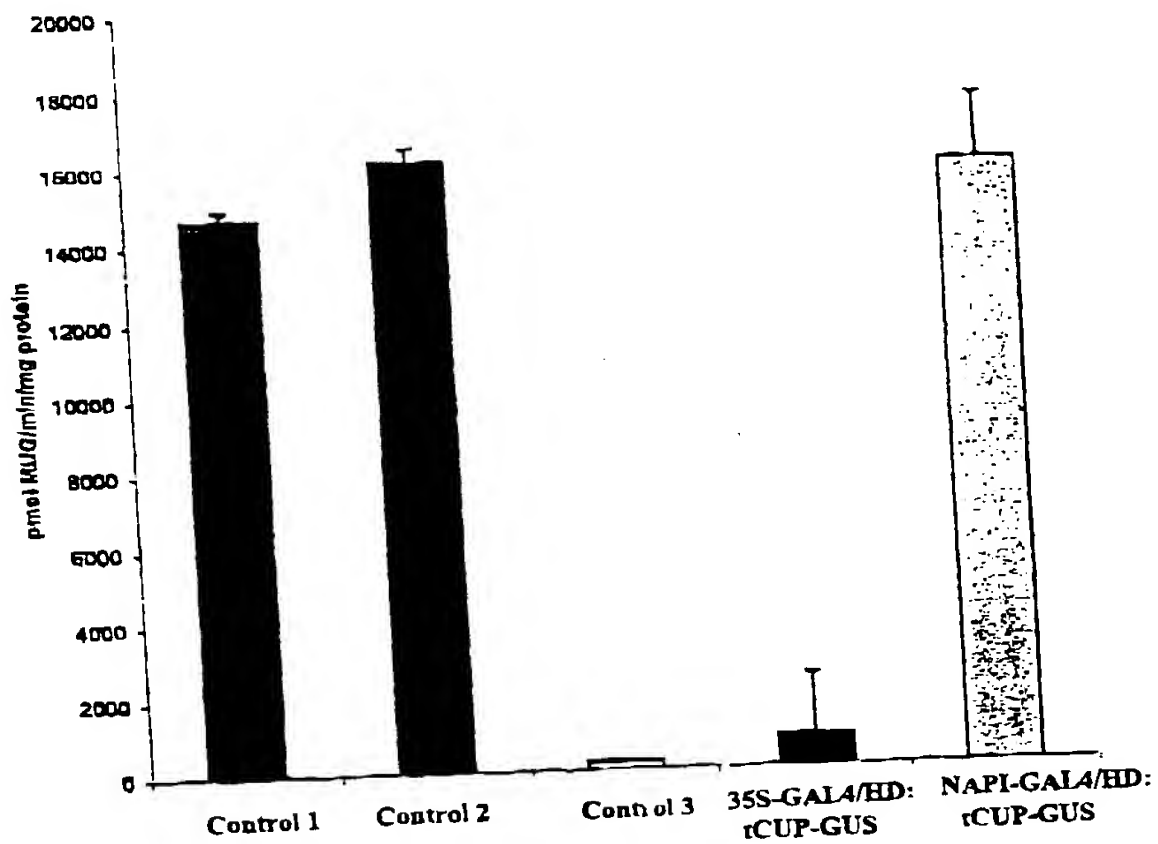
Figure 19(b)

Tissue Florogenic Transient Expression Assay of Seeds

y-axis: pmol MUG/min/mg protein

x-axis labels: Control 1 | Control 2 | Control 3 | 35S-GAL4/HD: tCUP-GUS | NAPI-GAL4/HD: tCUP-GUS
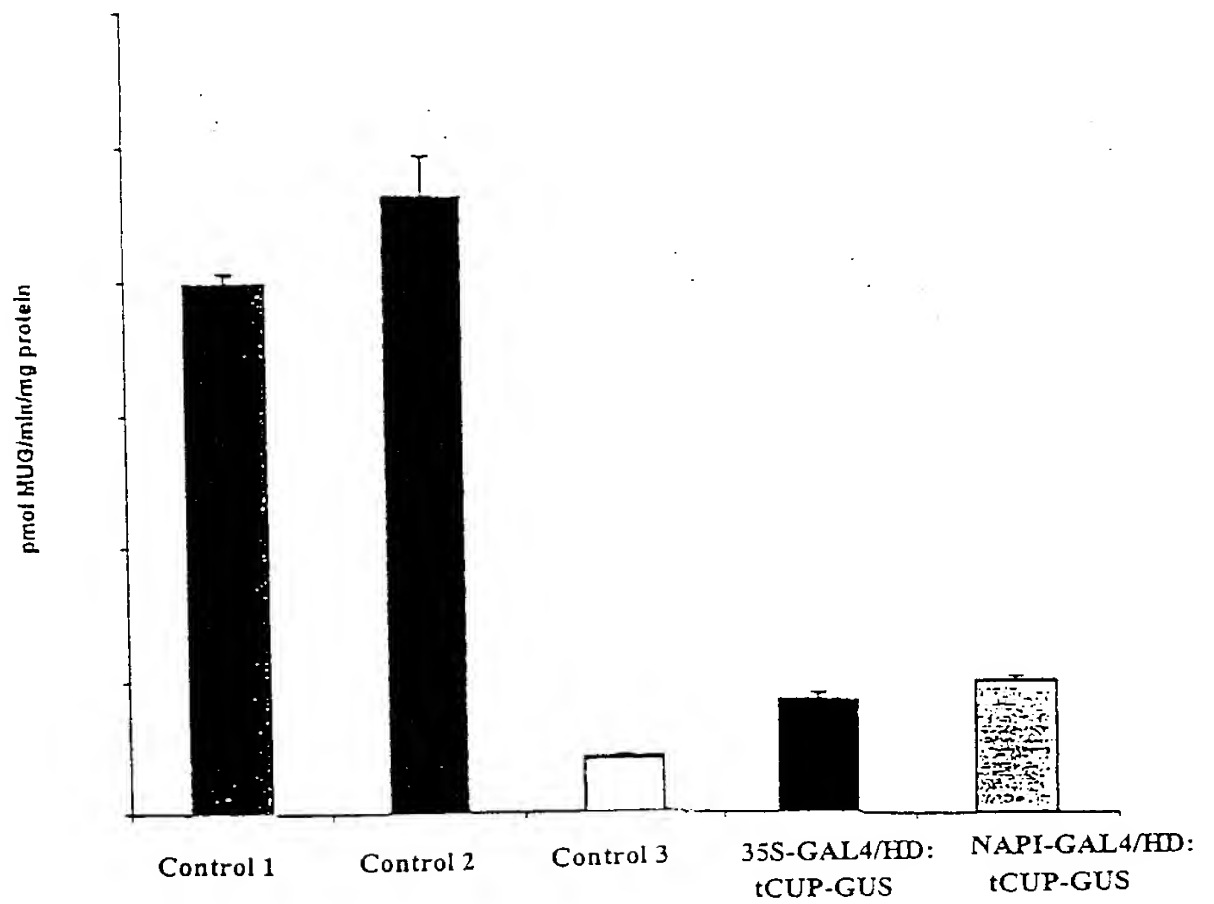
Figure 19(c)

A

Effector Plasmids

35S/Pti4 — [35S] — [Pti4] — [Nos-T]

tCUP/Pti4 — [tCUP] — [Pti4] — [Nos-T]

Reporter Plasmid

GCC/GUS — ■ ■ — [-62tCUP] — [GUS] — [Nos-T]

GCC-box
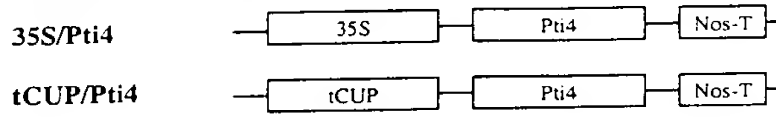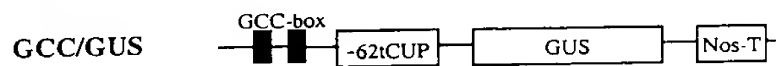
B
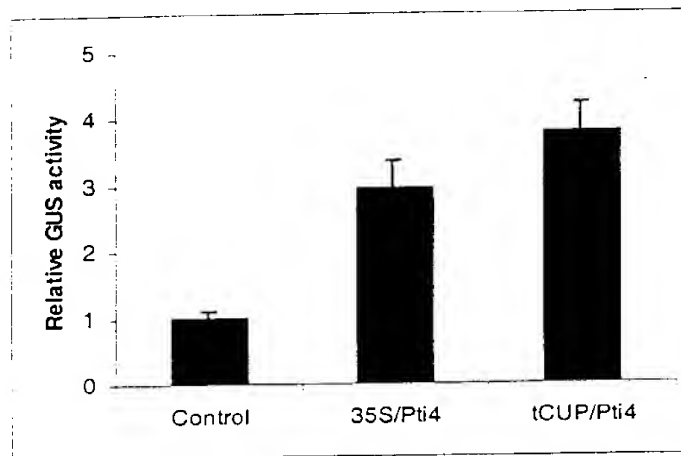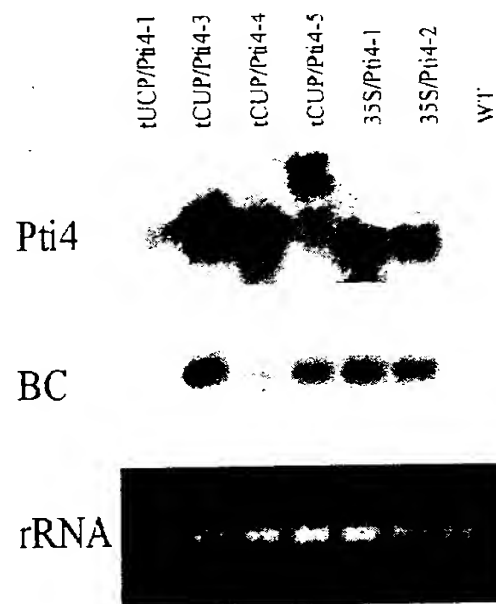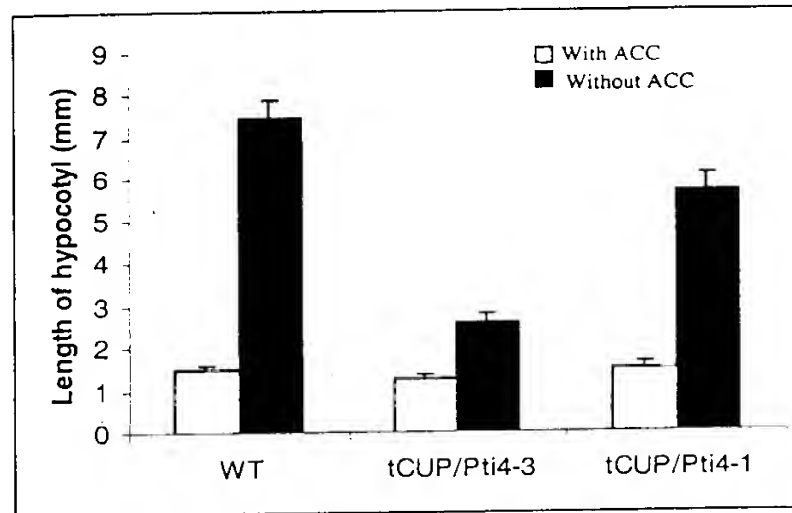
Figure 20

Figure 21

Figure 22

Figure 23

Figure 24